1.4 Cash Control by Fund and Program Cost Allocations (PCA) needs

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Cash Control By Fund

Objective:

To validate that the cash balance is available in a given fund (And other determined dimensions), except for the permissible funds for a cash account or permissible GL accounts, before causing payments to the creditors and the employees or before causing transfers out of cash / bank account.

Background:

The State of South Carolina makes payment if and only if the balance in bank account for a fund is positive. This ensures that cash balance in one fund is not used up by another, temporarily or otherwise. This is important to the state, as state holds fund and cash balances on federal and other authorities provided to them for a purpose. For example, The State should make sure that federal funds are not used up to pay other purposes.

SAP recommends Pooled Cash and Investment pool concept on cash transfers between funds for public sector. It recommends that separate GL accounts should not be used for each fund.

The State of South Carolina in fact is following the, pooled cash accounts approach and does not segregate cash accounts based on funds. Due to the nature of relationship of cash holding, it is important that state ensures that cash belonging to one is not used (temporary or otherwise {mis}appropriation) by others.

SAP checks the availability of funds in FM at the time when expenditure is incurred or committed. There is a time lag between the budget release and the actual cash availability. Also, there are times when the cash is moved out say, to investments. As a result fund availability does not really ensure cash availability. So it is important to check the availability of cash by say, for a fund at the time of payment. Only certain permissible payments can be made, such as salaries, even though the cash balance is negative.

Description	July	Aug	Comments
Opening Cash Balance	+ 10,000	-0	
Approval for Grant	250,000		This is FM budget
Grant Receipts		+ 100,000	This is actual cash receipts
Payment for Grant	- 25,000 →	- 25,000	The payment in July should not be allowed

Payment of salary	- 40,000	- 40,000	Salaries to be paid even though the cash is negative
Transfer from other Fund	+ 30,000	- 30,000	This is the effect of using up some other fund's cash
Closing Cash Balance	-0	+ 5,000	

SAP does check the available cash / bank balance during the payment proposal and the payment run. However, such check is not done at the fund level but at Bank Account level.

It is sought to have this check at fund (or other determined) dimensions during payment as well as a similar validation for journal entries that causes movement of cash / bank balances between the funds.

Requirements/Expectations:

If payment made to vendor

(The formatting has been done based on main logic and sub-logic there-on)

During Payment run, check if the cash balance by fund (And other determined dimensions), is available.

> If not check if the payment is for permissible combination of fund and GL accounts.
>
> > If yes make payment but include in the exception list for reporting.
>
> If yes make payment proposal / print check.

Print exception list.

Print Payment proposal / payment list.

If cash is transferred from one fund to another

The transfers from cash account should be permissible only if the balance in the cash account by fund (and other determined dimensions) is positive or is for a determined permissible purpose.

An exception report is desired where the check failed.

Proposed Solution:

If payment made to vendor

The payment program in SAP does not call any user exits and hence it is proposed to activate a Business Transaction Event (BTE) and have it cause such a check through custom coding. The possible BTE’s that can be used are 00002110 or 00001810 and their potential use needs to be explored. The transaction code to add BTE’s is FIBF.

Since fund is not the only dimension for determining the cash availability (practices vary across agencies), it is suggested to have a table where dimensions such as business area, fund center, funded program, grant, internal order or project, etc…. is selected. The system should check if these fields (dimensions) are activated in the new GL.

Also, some of the payments will be made even though sufficient cash is not available. In order to accommodate this, a separate table of selections of accounts and the specified funds underneath it (Including provision for * / ALL) that will not be subject to hard error, is suggested.

The BTE’s which run at the time of payment program, will, at the point of checking if bank balance is sufficient to make the payment, exit to a routine that will cause the checking if the cash balance by fund (and other determined dimensions) is sufficient

Logic

(The formatting has been done based on main logic and sub-logic there-on)

Select a vendor to be paid earliest.

Determine invoices to be paid.

Go to FAGLFLEXA and summarize the invoices to be paid, by fund (and other determined dimension)

Go to FAGLFLEXT and determine the cash balance by fund.

> If cash balance is not sufficient, check in a defined (config?) table, if this is for an Account / Fund combination where hard error is not permissible (e.g. salaries)
>
> > If yes, cause payment proposal / payment.
> >
> > > Record for reporting in an exception list.
> >
> > If not, reject payment for ENTIRE invoice.
> >
> > > Record for reporting in an exception list

If cash balance is sufficient, then create a proposal / payment.

Report both exceptions and the proposal / payment list.

If a line item, or part, causes insufficient fund, reject the entire invoice for payment and do not make payment for a line item, or part of a line item, where one fund has sufficient cash and other does not.

If cash is transferred from one fund to another

Activate FI validation at Line-Item level

Check if cash account is posted

Store available cash by fund (or other determined funds) in an internal table. This is necessary to reduce available cash balance for each line before a document is posted.

Check if the account is credited

If yes, check if total in FAGLFLEXT for the cash by the Fund (or determined dimensions) is greater (Positive) than the line item value.
Record the run-time info

If cash balance is not sufficient, check in a defined (config?) table, if this is for a Account / Fund combination where hard error is not permissible (e.g. salaries)

If yes, allow posting.

Record for reporting in an exception list.

If not, reject the ENTIRE entry.

Record for reporting in an exception list
Record the run-time info and reduce available cash balance for subsequent lines.

If cash balance is sufficient, then allow the entry.
Record the run-time info

Report both exception lists out of run-time info..

Special Organizational Considerations

N/A

Changes to Existing Organization

N/A

System Configuration Considerations

It is important to determine that dimensions selected, either for check or permissible funds, are made available in the FAGLFLEXT tables.

In order to be able to pass the payment proposal data to the payment run while automatically reserving the cash considered in the payment proposal, modifications to the core R/3 may be required.

Conclusion

SAP is considering a similar functionality in ERP 2007. This functionality contemplates verifying the availability of cash by account assignments, through a cash ledger. Such functionality also considers stable movement of payment proposal values to the payment run.

Ideally, SAP should develop the functionality jointly with SCEIS as a pilot version that will ensure stable system to SCEIS.

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Program Cost Accounts (PCA)

Objective:

An attempt is made to list possible options for determining the Program Cost Accounts (PCA) split , that certain legacy systems of the State of South Carolina has already in place.

Background:

Currently State of Carolina has a legacy system that determines Program Cost Accounts (PCA) based on a table that splits the account assignments upon entering a PCA code, business area and the amount. User does not have to enter or know all the accounts and account assignments during the entry.

SAP does not have this functionality. The closest functionality to this in SAP is an account assignment model. However, account assignment models work only with GL and not customers and vendors (i.e. only for FI journal entries).

This is an identified GAP and it is sought to identify accomplishing means in SAP.

Possible options:

Options with ERP 2004

Front-end program.

One way to accomplish split at entry level is to create a front-end program that would determine the needed account assignments and split from a custom table and pass these value(s) to the relevant transaction for further processing such as:

FB50 – Entering FI Journal using enjoy transactions or
FB60 – Entering Vendor Invoice w/o reference to PO in FI or
FB70 – Entering customer Invoice w/o reference to SO in FI or
ME21N – Entering PO using enjoy transaction
ME51N – Creating a purchase requisitions using enjoy transactions

This aspect is explained in detail below.

Excel upload

Have template Excel worksheets with lists of account assignments and values. Use this sheet for upload to FI transactions. This option may require some developments to upload them into MM transactions such as PR’s / PO’s.

User exits.

SAP has placeholders for custom logic in the transaction through user exits. These user exits enable substitution and/or further processes during the transactions. However, the user exits are transaction(s) specific or module specific. Therefore, multiple user exits need to be created to accomplish the same objective in each different module, depending upon where the transaction takes place. It is important to maintain and synchronize them at all times, for consistency purposes.

Some of the possible user exits are listed below:

Purchase Requisition / Purchase Order in transaction ME51N / ME21N
A good programmer can misuse MM/ME exits
BAdi ME_PURCHDOC_POSTED / ME_REQ_POSTED

Goods Receipts

Not Relevant

Logistics Invoice Verification in transaction MIRO

BAdi INVOICE_UPDATE
Before updating
During updating

Financial Accounting in enjoy transaction FB50 / FB60 / FB70

Substitution Exit RGGBS000
BTE

Modify / upgrade account assignment model in SAP

Options with ERP 2005

Rule based splitting

The functionality of splitting the line item into many based on configured rules is available in ERP 2005. The ERP 2005 functionality only works for MM scenarios in SAP and does not work for FI documents. The functionality is also not available for the SRM shopping cart. An alternative strategy is needed for them.

Front-end Program.

One way to accomplish these splits at entry level is to create a front-end program that would determine the needed account assignments and split from a custom table and pass these value(s) to the relevant transaction for further processing such as :

FB50 – Entering FI Journal using enjoy transactions or
FB60 – Entering Vendor Invoice w/o reference to PO in FI or
FB70 – Entering customer Invoice w/o reference to SO in FI or
ME21N – Entering PO using enjoy transaction
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.

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        Before updating
        During updating

Financial Accounting in enjoy transaction FB50 / FB60 / FB70

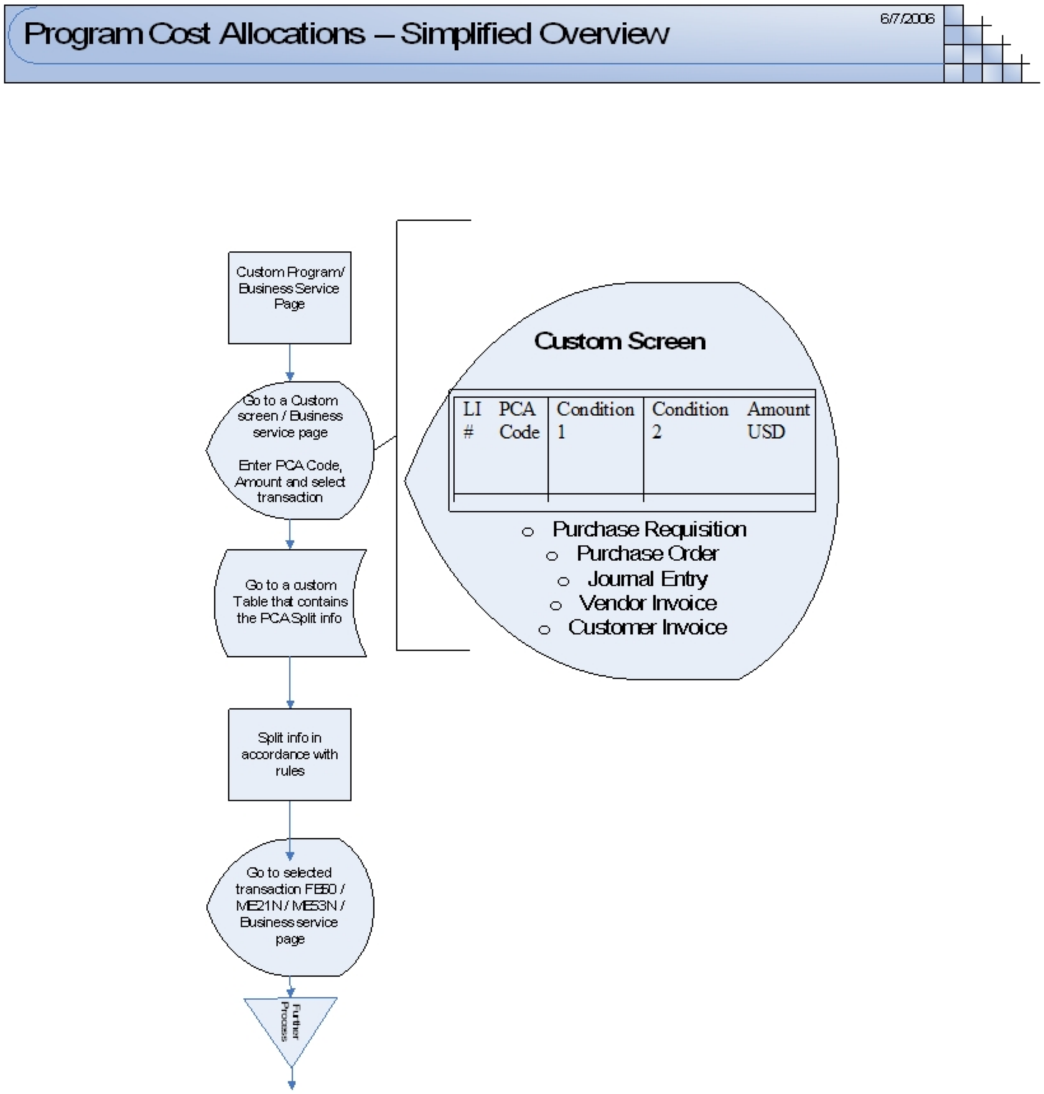
    Substitution Exit RGGBS000
    BTE

Custom Front-end program option:

Overview

Considering the fact that rule based splitting (available from ERP 2005) can only address the Purchasing scenarios in SAP R/3, a solution needs to be in place that would fit for all processes. Considering various facts, it appears that all options except custom front-end program works in select scenarios only. So the custom front-end program option is elaborated further, as it appears more promising.

Simplistically stated, it would be as follows:



Program Cost Allocations – Simplified Overview

6/7/2006

Custom Program/ Business Service Page
Go to a Custom screen / Business service page
Enter PCA Code, Amount and select transaction
Go to a custom Table that contains the PCA Split info
Split info in accordance with rules
Go to selected transaction FB60 / ME21N / ME53N / Business service page
Further Process
Custom Screen
LI #
PCA Code
Condition 1
Condition 2
Amount USD
Purchase Requisition
Purchase Order
Journal Entry
Vendor Invoice
Customer Invoice

Suggested Approach:

If the entry is from SAP

Go to custom program / transaction

The program / transaction would initially come up with the custom screen painter that would include option to enter / select

- Line item
- PCA Code
- Condition 1
- Condition 2
- Amount
- Options to select if process is for
  - Purchase requisition
  - Purchase order
  - Journal Entry
  - Vendor Invoice
  - Customer invoice

There would be a custom table where the PCA split rules are maintained (security for updates would be restricted by each agency).

The program would look-up the PCA split rules custom table and split the line items based on PCA codes and amount entered.

Based on the selection of process to be further accomplished (such as Purchase requisition or Purchase order or FI entries) the program would call such transaction and pass the line values to those, for further processing (such as ME51N or ME21N or FB50 /FB60 / FB70).

If the entry is from SRM

Go to custom business service pages

The program / transaction would initially come up with the custom business service pages that would include option to enter / select

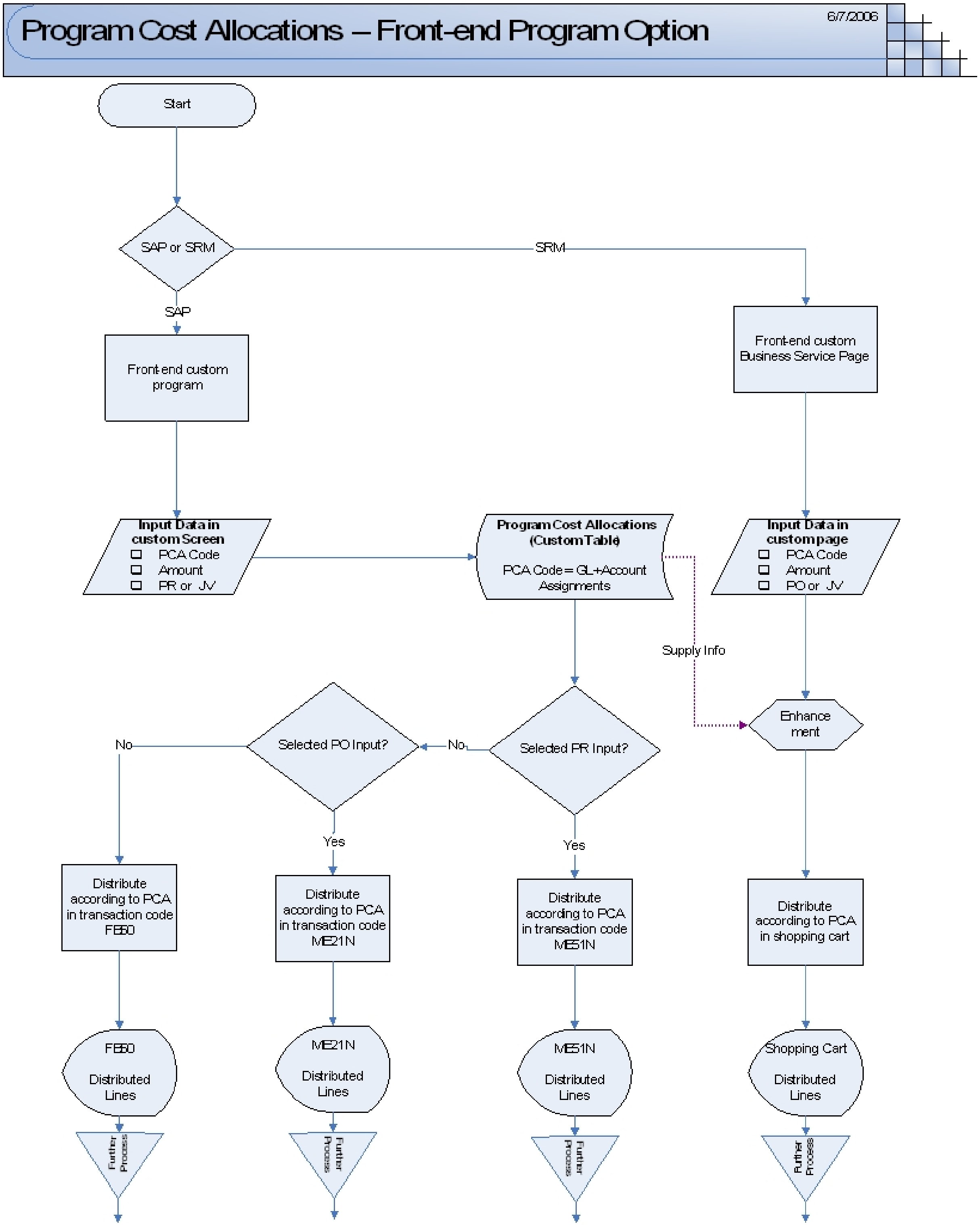
- Line item
- PCA Code
- Condition 1
- Condition 2
- Amount

There would be a custom table where the PCA split rules are maintained.

The Enhancement program would look-up the PCA split rules custom table and split the line items based on PCA codes and amount entered.

The enhancement program would pass the line values to the shopping cart, for further processing.

Overall flow


Program Cost Allocations – Front-end Program Option
6/7/2006
Start
SAP or SRM
SRM
SAP
Front-end custom program
Front-end custom Business Service Page
Input Data in custom Screen
☐ PCA Code
☐ Amount
☐ PR or JV
Program Cost Allocations (Custom Table)
PCA Code = GL+Account Assignments
Input Data in custom page
☐ PCA Code
☐ Amount
☐ PO or JV
Supply Info
Enhancement
Selected PO Input?
No
No
Selected PR Input?
Yes
Yes
Distribute according to PCA in transaction code FB50
Distribute according to PCA in transaction code ME21N
Distribute according to PCA in transaction code ME51N
Distribute according to PCA in shopping cart
FB50 Distributed Lines
ME21N Distributed Lines
ME51N Distributed Lines
Shopping Cart Distributed Lines
Further Process
Further Process
Further Process
Further Process

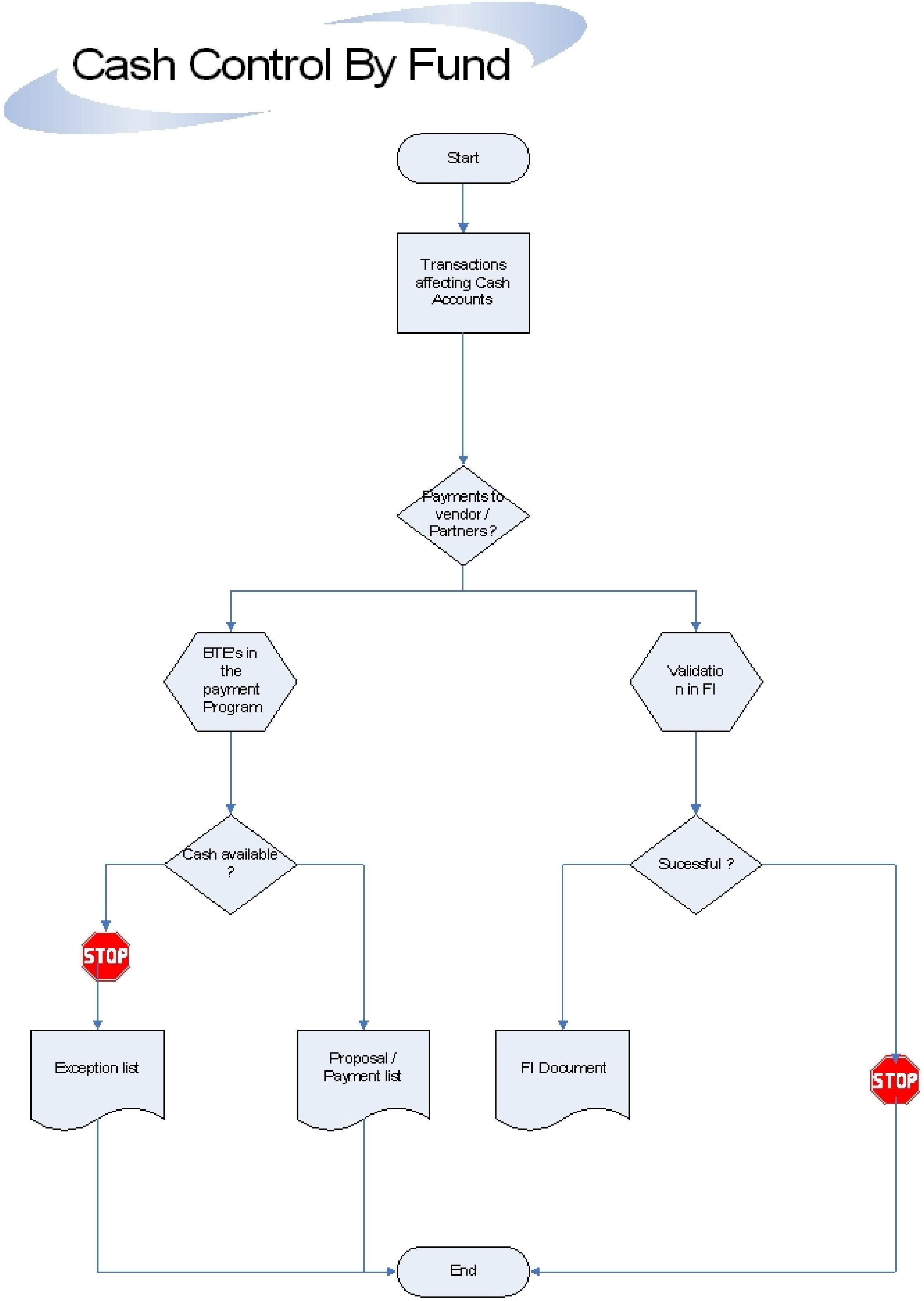
Consideration:

It is also absolutely necessary to limit the transactions that can be accessed for PCA functionality to invoke. (Since same entries can be arrived through different transaction codes)

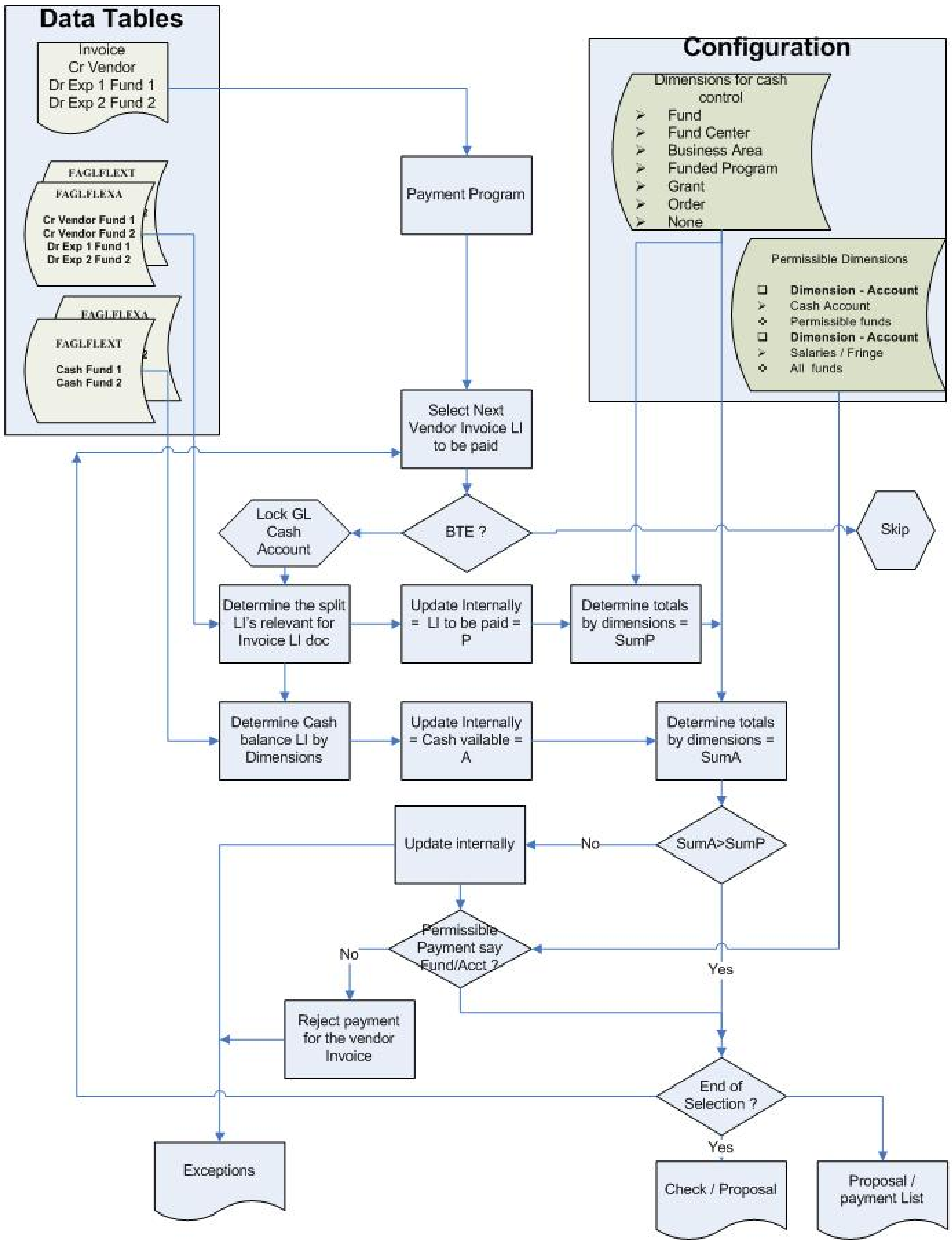
Conclusion

An evaluation of implementation strategy including the initial release and the pros & cons of each process needs to be assessed to enable the decision making and further steps.

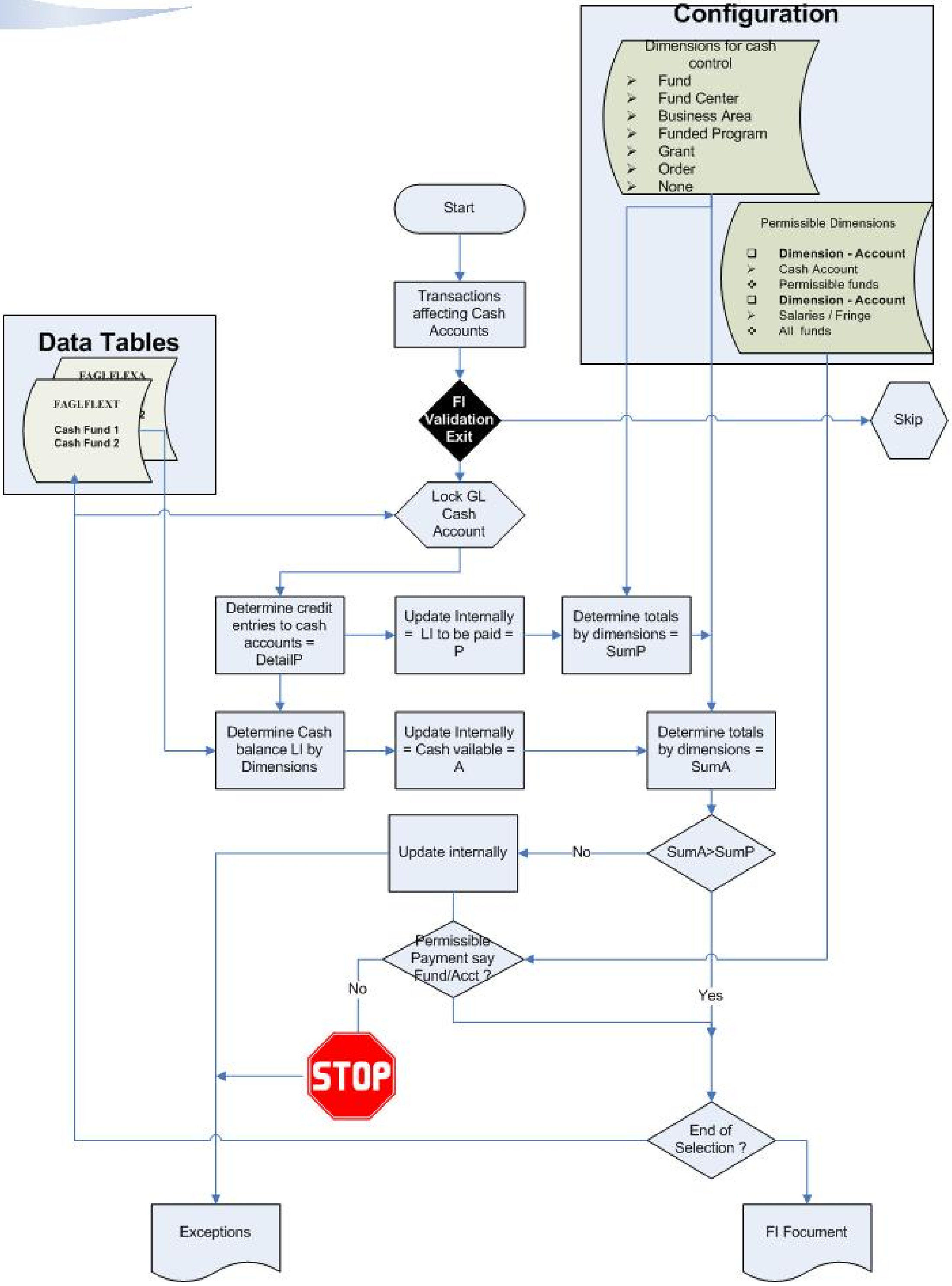
Appendix: Flow diagram of Cash by Fund process


Cash Control By Fund
Start
Transactions affecting Cash Accounts
Payments to vendor / Partners ?
BTE's in the payment Program
Validation in FI
Cash available ?
Sucessful ?
STOP
Exception list
Proposal / Payment list
FI Document
STOP
End

Cash Control By Fund – (FI–AP) Payments to Vendors and Partners


Data Tables
Invoice
Cr Vendor
Dr Exp 1 Fund 1
Dr Exp 2 Fund 2
FAGLFLEXT
FAGLFLEXA
Cr Vendor Fund 1
Cr Vendor Fund 2
Dr Exp 1 Fund 1
Dr Exp 2 Fund 2
FAGLFLEXA
FAGLFLEXT
Cash Fund 1
Cash Fund 2
Configuration
Dimensions for cash control
Fund
Fund Center
Business Area
Funded Program
Grant
Order
None
Permissible Dimensions
Dimension - Account
Cash Account
Permissible funds
Dimension - Account
Salaries / Fringe
All funds
Payment Program
Select Next Vendor Invoice LI to be paid
BTE ?
Lock GL Cash Account
Skip
Determine the split LI's relevant for Invoice LI doc
Update Internally = LI to be paid = P
Determine totals by dimensions = SumP
Determine Cash balance LI by Dimensions
Update Internally = Cash vailable = A
Determine totals by dimensions = SumA
Update internally
No
SumA>SumP
Permissible Payment say Fund/Acct ?
No
Yes
Reject payment for the vendor Invoice
End of Selection ?
Yes
Exceptions
Check / Proposal
Proposal / payment List

Cash Control By Fund – (FI–GL) Journal Entries


Configuration
Dimensions for cash control
➢ Fund
➢ Fund Center
➢ Business Area
➢ Funded Program
➢ Grant
➢ Order
➢ None
Permissible Dimensions
❑ Dimension - Account
➢ Cash Account
❖ Permissible funds
❑ Dimension - Account
➢ Salaries / Fringe
❖ All funds
Data Tables
FAGLFLEXA
FAGLFLEXT
Cash Fund 1
Cash Fund 2
Start
Transactions affecting Cash Accounts
FI Validation Exit
Skip
Lock GL Cash Account
Determine credit entries to cash accounts = DetailP
Update Internally = LI to be paid = P
Determine totals by dimensions = SumP
Determine Cash balance LI by Dimensions
Update Internally = Cash vailable = A
Determine totals by dimensions = SumA
Update internally
No
SumA>SumP
Permissible Payment say Fund/Acct ?
No
Yes
STOP
End of Selection ?
Exceptions
FI Focument